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Mineral Industry Surveys

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MOLYBDENUM IN SEPTEMBER 2005

Domestic production of molybdenum in concentrate in September 2005 was about 13% less than that of the previous month and was about 47% more than that of September 2004, according to the U.S. Geological Survey. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 5,930 metric tons (t) at the beginning of 2005 and about 7,160 t at the end of September.

According to Ryan's Notes (2005b), the September monthly average prices for U.S. ferromolybdenum (FeMo) ranged from $36.278 to $37.500 per pound of molybdenum content, compared with $36.000 to $37.444 in August. European FeMo monthly averages ranged from $82.222 to $84.000 per kilogram (kg) of molybdenum content in September as compared with $72.889 to $73.667 in August. In September, worldwide molybdenum oxide (MoO_3) prices ranged from $33.222 to $34.222 per pound versus $28.889 to $29.944 in August.

Traders reported that the molybdenum market remained stable and expected it to remain strong into 2006. There were no signals that prices would drop unexpectedly, that Chinese production would increase, or that Chinese consumption would decrease dramatically. In the first 7 months of 2005, Chinese molybdenum exports decreased by about 25%, and Chinese FeMo exports decreased about 43%, as compared with those of the same period in 2004. Chinese molybdenum production in 2005 was expected to be about 20%, or 9,000 t, lower than that of 2004. Chinese delegates at the International Molybdenum Association meeting in Shanghai, China, did not expect the molybdenum mines in the Huludao Region to reopen and be at full production until the second quarter of 2006. A Western converter stated that even if Chinese production resumed, exports would be reduced by the projected 10% to 15% increase in internal Chinese consumption until 2010 (Ryan's Notes, 2005a).

Corporación Nacional del Cobre's (Codelco's) Chuquicamata Mine in northern Chile expected to produce 27,000 t of molybdenum in 2005, according to a company representative. Codelco achieved a production breakthrough in 2004 that increased production to about 22,000 t of molybdenum, but that output was not sustainable. Production in 2006 was predicted to fall to about 20,000 t of molybdenum. With MoO_3 trading at record prices, several of Chile's copper producers have altered mine plans in order to extract ores higher in molybdenum content and have focused on molybdenum extraction over copper (Platts Metals Week, 2005b).

Chinese production of molybdenum-bearing stainless steel has increased rapidly in recent years, reaching 40,000 t in 2004, up tenfold as compared with that of 2000. Production in the first half of 2005 surpassed the 2004 full-year total. Chinese stainless steel production was expected to reach 4.62 million metric tons (Mt) in 2004 and 8.64 Mt by 2007. Chinese consumption of stainless steel rose to 4.47 Mt in 2004, with imports accounting for about 65% of total. By 2010, Chinese stainless steel consumption was forecast to reach 6.5 Mt, with molybdenum-bearing stainless steel representing about 450,000 t (Platts Metals Week, 2005a).

Included in this Mineral Industry Surveys are U.S. production and shipments of molybdenum concentrates and materials, U.S. consumption by end use, stocks of molybdenum material in August and September 2005, and trade data for July and August 2005.

References Cited

Platts Metals Week, 2005a, China's moly-bearing steel sector to see strong growth: Platts Metals Week, v. 76, no. 38, September 19, p. 2.
Platts Metals Week, 2005b, Chuquicamata to produce record 27,000 t moly in 2005: Platts Metals Week, v. 76, no. 37, September 12, p. 9.
Ryan's Notes, 2005a, Moly market's stability likely to last: Ryan's Notes, v. 11, no. 39, September 26, p. 3.
Ryan's Notes, 2005b, [untitled]: Ryan's Notes, v. 11, no. 40, October 3, p. 10.

TABLE 1
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS[1]

(Metric tons, contained molybdenum)

	2004		2005		
	January-December[r]	January-September	August	September	January-September
Production	41,500	30,000	5,580	4,830	42,700
Shipments:[2]					
Domestic	30,700	22,500	3,810	3,630	28,700
Export	11,200	7,500	1,710	1,550	14,100

[r]Revised.
[1]Data are rounded to no more than three significant digits.
[2]As reported by producers.

TABLE 2
U.S. REPORTED PRODUCTION AND SHIPMENTS OF MOLYBDENUM PRODUCTS[1]

(Metric tons, contained molybdenum)

	2004		2005		
	January-December	January-September	August	September	January-September
Gross production	66,300	47,500	7,480	6,390	61,800
Internal consumption[2]	42,000	29,900	4,860	3,900	39,200
Gross shipments	39,300	29,000	3,850	3,740	35,600

[1]Data are rounded to no more than three significant digits.
[2]Includes molybdic oxides, metal powder, ammonium molybdate, sodium molybdate, and other.

TABLE 3
U.S. REPORTED CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS[1]

(Kilograms, contained molybdenum)

End use	Molybdic oxides	Ferro molyb-denum[2]	Ammonium and sodium molybdate	Molyb-denum scrap	Other	Total
2005, August:						
Steel:						
Carbon	10,300	W	--	--	W	10,300
High-strength low-alloy	38,000 r	8,430 r	--	--	11,300	57,800 r
Stainless and heat-resisting	165,000	66,700	--	W	6,510	239,000
Full alloy	160,000	212,000	--	--	1,510	373,000
Tool	91,500 r	W	--	--	--	91,500 r
Total	465,000 r	287,000 r	--	W	19,400	772,000 r
Cast irons (gray, malleable, and ductile iron)	W	9,410	--	--	763	10,200
Superalloys	107,000 r	W	--	(3)	120,000 r	227,000 r
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	205	2,350	--	--	--	2,550
Mill products made from metal powder[4]	--	--	--	--	189,000	189,000
Cemented carbides and related products[5]	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	962	962
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,900	10,900
Other	1,090	33,500	73,800	1,840	16,800	127,000
Grand total	651,000 r	332,000 r	73,800	1,840	357,000 r	1,420,000 r
Stocks, August 31, 2005	485,000 r	191,000 r	2,580	19,300 r	860,000	1,560,000 r
2005, September:						
Steel:						
Carbon	10,400	W	--	--	W	10,400
High-strength low-alloy	23,700	9,370	--	--	11,300	44,400
Stainless and heat-resisting	169,000	69,500	--	W	6,510	245,000
Full alloy	153,000	188,000	--	--	1,510	343,000
Tool	50,500	W	--	--	--	50,500
Total	406,000	267,000	--	W	19,400	693,000
Cast irons (gray, malleable, and ductile iron)	W	8,470	--	--	763	9,240
Superalloys	118,000	W	--	(3)	126,000	245,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	2	3,200	--	--	--	3,210
Mill products made from metal powder[4]	--	--	--	--	183,000	183,000
Cemented carbides and related products[5]	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	1,050	1,050
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	11,200	11,200
Other	1,090	30,900	74,700	1,840	16,800	125,000
Grand total	603,000	310,000	74,700	1,840	358,000	1,350,000
Stocks, September 30, 2005	479,000	212,000	4,380	20,400	851,000	1,570,000

[r]Revised. W Withheld to avoid disclosing company proprietary data; included in "Other" of the "Miscellaneous and unspecified uses" category.
-- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes calcium molybdate.
[3]Included in "Other" of the "Superalloys" category.
[4]Includes ingot, wire, rod, and sheet.
[5]Includes construction, mining, oil and gas, metalworking machinery.

TABLE 4
U.S. EXPORTS OF MOLYBDENUM ORES AND CONCENTRATES
(including roasted concentrate), BY COUNTRY[1]

(Kilograms, contained molybdenum)

	2004		2005		
Country	January-December	January-August	July	August	January-August
Australia	30,500	19,000	9,180	9,470	110,000
Austria	1,310,000	688,000	--	648	3,230
Belgium	6,470,000	3,450,000	500,000	3,140,000	6,220,000
Brazil	31,000	11,900	--	--	66,100
Canada	1,370,000	728,000	464,000	178,000	2,860,000
Chile	1,380,000	1,380,000	--	--	111,000
China	36,000	36,000	621,000	633,000	3,680,000
Costa Rica	26,700	21,300	--	--	3,810
India	430	--	2,890	--	37,300
Italy	--	--	--	--	35,100
Japan	5,730,000	3,140,000	444,000	90,200	1,470,000
Korea, Republic of	95,200	76,400	--	--	11,400
Mexico	3,910,000	1,230,000	495,000	386,000	1,950,000
Netherlands	14,100,000	7,880,000	1,410,000	2,060,000	12,500,000
Sweden	38,200	--	--	--	--
Taiwan	19,200	11,700	--	--	3,600
United Kingdom	8,910,000	4,690,000	356,000	832,000	4,910,000
Other	2,770,000	1,390,000	725	153,000	753,000
Total	46,200,000	24,800,000	4,300,000	7,490,000	34,700,000

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF FERROMOLYBDENUM, BY COUNTRY[1]

(Kilograms, contained molybdenum)

	2004		2005		
Country	January-December	January-August	July	August	January-August
Australia	1,090	1,090	--	--	--
Brazil	--	--	--	--	16,600
Canada	870,000	665,000	24,900	89,000	1,320,000
France	10,100	--	--	--	--
Indonesia	381	--	--	--	5,930
Mexico	33,700	33,700	--	4,260	9,200
Netherlands	--	--	--	--	33,300
Sweden	9,150	--	--	--	--
United Kingdom	491	491	--	--	--
Total	925,000	701,000	24,900	93,200	1,390,000

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 6

U.S. IMPORTS FOR CONSUMPTION OF MOLYBDENUM PRODUCTS[1]

(Kilograms, unless otherwise specified)

	January-December 2004			August 2005			January-August 2005		
Material	Gross weight	Contained molybdenum	Value[2] (thousands)	Gross weight	Contained molybdenum	Value[2] (thousands)	Gross weight	Contained molybdenum	Value[2] (thousands)
Ore and concentrates roasted	7,580,000	4,710,000	$133,000	466,000	304,000	$23,800	5,480,000	3,440,000	$246,000
Ore and concentrates other	9,330,000	4,070,000	135,000	640,000	302,000	19,400	9,400,000	4,320,000	305,000
Molybdenum chemicals:									
Oxides and hydroxides	822,000	NA	15,800	170,000	NA	6,550	934,000	NA	30,300
Molydates of ammonium	1,940,000	1,330,000	18,400	165,000	161,000	3,950	2,930,000	1,950,000	34,100
Molydates (all others)	254,000	116,000	1,430	198	90	11	65,500	17,000	941
Molybdenum orange	1,030,000	NA	4,760	102,000	NA	497	596,000	NA	3,130
Ferromolybdenum	8,310,000	5,310,000	158,000	533,000	339,000	24,700	4,280,000	2,730,000	190,000
Molybdenum powders	139,000	95,200	4,930	10,300	4,290	1,010	57,900	46,800	5,080
Molybdenum unwrought	151,000	151,000	3,520	15,100	15,100	830	54,500	54,300	3,210
Molybdenum waste and scrap	454,000	415,000	10,200	24,500	19,100	1,320	354,000	340,000	25,300
Molybdenum wire	20,500	NA	2,010	1,890	NA	302	14,900	NA	2,310
Molybdenum other	132,000	NA	13,700	16,000	NA	2,240	114,000	NA	14,700
Total	30,200,000	16,200,000	501,000	2,140,000	1,140,000	84,600	24,300,000	12,900,000	861,000

NA Not available.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Customs value.

Source: U.S. Census Bureau.